## CLAIMS

1. A method of crimping a polymeric stent, comprising:

a) inserting the stent into an elastic tube having an inner surface that defines a passage;

b) pulling the tube to cause stretching of the tube, such that the inner surface of the tube engages an outer surface of the stent and applies simultaneous longitudinal and radial forces to the outer surface of the stent to thereby simultaneously reduce a radial extent of the stent and increase a longitudinal extent of the stent.

2. The method of claim 1 wherein the first and second end portions are pulled in opposite directions to impart simultaneous compressing and elongating forces to the outer surface of the stent.

3. The method of claim 1 further comprising releasing the tube to allow the tube to return to an undeformed size.

4. The method of claim 3 further comprising removing a crimped stent from the tube.

5. The method of claim 1 wherein the tube is an elastic silicone tube.

6. The method of claim 1 further comprising imparting a predetermined final size and shape to the stent before crimping the stent.

7. The method of claim 1 further comprising heating the stent above a glass transition temperature of the stent before crimping the stent.

8. The method of claim 1 wherein the elastic tube is made from an elastomeric polymer and wherein a diameter of the tube is reduced upon stretching of the tube.

9. The method of claim 7 further comprising cooling the stent, releasing the tube to allow the tube to its original shape, and removing the crimped stent from the tube.

10. The method of claim 1 further comprising inserting a diameter setting member into the stent before crimping the stent to define a diameter of the crimped stent.

11. The method of claim 1 wherein an inner surface of the tube adheres to an outer surface of the stent to apply simultaneous longitudinal and radial forces to the stent.

12. The method of claim 1 wherein the stent is crimped to an angioplasty balloon by pulling the tube.

13. The method of claim 1 further comprising removing the stent from the tube and crimping the stent to an angioplasty balloon with a second crimping device.

14. The method of claim 1 wherein a solvent is added to the tube to expand the tube before the stent is placed in the tube and evaporating the solvent to bring the tube into contact with the stent.

15. An apparatus for crimping a polymeric stent having an outer surface, comprising:

a) an elastic tube having an inner surface that defines a passage that is sized to fit over the outer surface of the stent;

b) an actuator coupled to the elastic tube, wherein movement of the actuator increases a length of the elastic tube and decreases an extent of the passage, wherein the inner surface of the tube engages the outer surface of the stent and reduces an extent of the stent to thereby crimp the stent.

16. The apparatus of claim 15 wherein the increase in length of the elastic tube and the decrease in extent of the passage of the tube reduces a diametric extent of the stent and increases a longitudinal extent of the stent.

17. The apparatus of claim 15 wherein the actuator pulls first and second end portions of the elastic tube in opposite directions to impart simultaneous compressing and elongating forces to the outer surface of the stent.

18. The apparatus of claim 15 wherein the tube is an elastic silicone tube.

19. The apparatus of claim 15 further comprising a heating element for heating the stent above a glass transition temperature of the stent before crimping the stent.

20. The apparatus of claim 15 further comprising a diameter setting member that is inserted into the stent before crimping the stent to define a diameter of the crimped stent.

21. A method of preparing a polymeric stent for application in vasculature of a patient, comprising:

a) imparting predetermined final size and shape to the stent by an education process;

b) inserting the stent into an elastic tube having an inner surface that defines a passage;

c) heating the stent to a temperature at or above a glass transition temperature such that the imparted final size and shape is retained by the stent;

d) pulling the tube to cause stretching of the tube, such that the inner surface of the tube engages an outer surface of the stent and applies simultaneous longitudinal and radial forces to the outer surface of the stent to thereby simultaneously reduce a radial extent of the stent and increase a longitudinal extent of the stent;

e) cooling the stent to a temperature below the glass transition temperature;

f) releasing the tube, such that at least a portion of the inner surface of the tube disengages at least a portion of the outer surface of the stent; and

g) removing the stent from the tube.